Fact Sheet for Antidegradation Assessment
For Cook County Department of Transportation
IEPA Log No. C-0149-15
COE Log No. LRC-2014-554
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The Cook County Department of Transportation ("Applicant") has applied for Section 401 water quality certification for impacts associated with Phase II of the Joe Orr Road Extension project. The first phase of the project routed Joe Orr Road 1400 feet south of its original alignment. The proposed Phase II project would continue Joe Orr Road eastward/northeastward one mile to a new intersection with Burnham Avenue. The new corridor would create two new intersections at Glenwood-Dyer Road and Burnham Avenue; both of which would be controlled by traffic lights. The purpose of this project is to extend and improve east-west access through the Village of Lynwood from Torrence Avenue on the west to Burnham Avenue on the east, with the overall goal of extending the road to Main Street in Munster and Dyer, Indiana. The road would have 4 lanes plus a 16' median for future left turn lanes and would have curbs and gutters leading to storm drain lines and three detention basins. The detention basins are planned adjacent to the road which would outlet to a new storm line flowing north to an outlet at North Creek (referred to as Lansing Ditch in the application materials).

Impacts to onsite wetlands would primarily result from the permanent sand and gravel fill associated with the construction of the road and detention basins. Additional impacts to natural areas would occur due to the excavation of wetlands to a lower elevation. However, a wetland bottom would still be maintained in these impacted areas. The road and detention basins would impact 4.297 acres of habitat from three federally jurisdictional wetlands. Additionally, three isolated wetlands (1.35 acres total) under the jurisdiction of the Illinois Department of Natural Resources (IDNR) would also be permanently impacted, and < 0.01 acres (a maximum of 10 cubic yards) of sediment would be excavated below the OHWM of North Creek and replaced with riprap. A wetland Resources Review for this project was completed by Patrick Malone of IDNR on November 12, 2014. Based on the results of this review, it was agreed that this project shall be mitigated with the purchase of 25.49 acres from Cedar Creek Wetland Mitigation, a commercial wetland mitigation bank in the Calumet River/Lake Michigan Watershed. A summary of impacts to federally jurisdictional wetlands and IDNR jurisdictional wetlands (isolated) as well as the compensatory mitigation required is provided in the table below.

Wetland ID	**Wetland Type**	**Average C Value, FQI**	**Impact (ac)**	**Mitigation Ratio**	**Mitigation Required (ac)**
Wetland 1 (Isolated)	Emergent	1.9, 5.7	0.015	2:1	0.03
Wetland 2 (Isolated)	Forested	1.3, 4.1	0.217	2:1	0.434
Wetland 3	Forested	1.2, 6.0	0.882	4:1	3.528
Wetland 4 (Isolated)	Forested	1.3, 6.6	1.118	4:1	4.472
Wetland 5	Farmed	0.5, 1.7	0.315	2:1	0.63

	emergent				
Wetland 6*	Scrub-shrub emergent	2.2, 12.0	3.10	4:1	16.4
Total			**5.647**		**25.49**

*The amount of impacts to this wetland was reduced by 1.0 acre due to the revised configuration of Pond 5. The amount of mitigation recommended for Wetland 6 was based off the originally proposed impact area of 4.1 acres

Identification and Characterization of the Affected Water Body.

The unnamed wetlands to be permanently impacted by the proposed project are General Use waters with zero 7Q10 flow. The wetlands have not been assessed under the Agency's 305(b)/303(d) program and have not been given an integrity rating or been listed as biologically significant in the 2008 Illinois Department of Natural Resources publication *Integrating Multiple Taxa in a Biological Stream Rating System*. The wetlands are not enhanced in regards to the dissolved oxygen water quality standard.

North Creek (HBDA-01) is a General Use water body with zero 7Q10 flow at the proposed project location. It is listed on the draft 2014 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use (causes = hexachlorobenzene, dissolved oxygen, sedimentation/siltation, and nonnative fish, shellfish or zooplankton (non-pollutant)). North Creek is not listed as a biologically significant stream but has been given a D integrity rating in the 2008 Illinois Department of Natural Resources publication *Integrating Multiple Taxa in a Biological Stream Rating System*. It is not enhanced in regards to the dissolved oxygen water quality standard.

Downstream waters to be potentially impacted by the proposed activities include segment HBD-04 of Thorn Creek, a General Use water with a 7Q10 low flow of 19.6 cfs. It is listed on the draft 2014 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use (causes = aldrin, alteration in stream-side of littoral vegetative covers (non-pollutant), chlordane, chloride, DDT, dieldrin, endrin, hexachlorobenzene, dissolved oxygen, phosphorus, and polychlorinated biphenyls) and primary contact recreation (cause = fecal coliform). Thorn Creek is not listed as a biologically significant stream but has been given an E integrity rating in the 2008 Illinois Department of Natural Resources publication *Integrating Multiple Taxa in a Biological Stream Rating System*. It is not enhanced in regards to the dissolved oxygen water quality standard.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

Pollutant load increases that would be associated with this project include increases in suspended solids during construction activities. Construction of the project would permanently fill 4.297 acres of jurisdictional wetlands and 1.35 acres of isolated wetlands, which would remove the existing uses of these waters.

Fate and Effect of Parameters Proposed for Increased Loading.

The increase in suspended solids would be local and temporary. Erosion control measures as well as the construction of over-sized detention basins (23-260% greater than minimum requirements) would be utilized to retain runoff onsite to the greatest practical extent and minimize downstream transport of suspended solids. The permanent loss of wetland habitat would be offset with compensatory mitigation.

Purpose and Social & Economic Benefits of the Proposed Activity.

The purpose of this project is to extend and improve east-west access from the Village of Lynwood from Torrence Avenue on the west to Burnham Avenue on the east, with the overall goal of extending the road to Main Street in Munster and Dyer, Indiana. The proposed improvements would reduce response time for emergency vehicles in Lynwood, provide better access to the Lansing Municipal Airport from the west, and improve the movement of goods and services for the community. By providing better access to the area, this project is also expected to stimulate business growth in the planned downtown area at the proposed intersection of Joe Orr Road and Glenwood-Dyer Road.

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.

The construction of the proposed project would follow guidelines set forth by the Agency and USACE which would ensure that BMPs are properly employed to minimize environmental impacts. Although unavoidable impacts are necessary to meet the goals of the project, impacts to wetlands and other natural resources have been minimized to the greatest practical extent. A summary of the alternatives considered by the Applicant was provided in the February 25, 2016 Cardno document entitled *Joe Orr Road Extension Alternatives Analysis*. The key considerations used to select the preferred alignment included the minimization of right-of-way acquisition and land use impacts, avoidance of sensitive receptors such as schools and parks, minimization of impacts to waterways, wetlands and floodplains, utilization of criteria consistent with Illinois Department of Transportation (IDOT) and Federal Highway Administration (FHWA) Procedures and Guidelines, and incorporation of regional transportation objectives and the Village of Lynwood's comprehensive plan. A summary of the alternative roadway designs and the roadway design ultimately selected is provided below.

Alternative 1 was planned to begin on the previous Joe Orr Road alignment and head east, then angle northeast to create a 90-degree intersection with Glenwood-Dyer Road, then turn east again to maintain an alignment that could eventually connect to 53rd Avenue (Main Street) at Sheffield Road in Indiana. This alignment required the relocation of at least seven (7) homes when it was originally studied. It also required the relocation of the garages and office building for the Kickert School Bus Company. The wetland impacts would have exceeded one acre at the time which was greater than the wetland impacts associated with the other routes. There would have also been impacts with the Lansing Airport proposed runway expansion project expansion zone approximately 0.5 miles east of Burnham Avenue. This route alternative was abandoned

during the first phase of the project and is no longer viable because Joe Orr Road has already been realigned to the south based on the Phase I chosen alternative west of Torrence Avenue.

Alternative 2 was planned with the intersection of Joe Orr Road and Torrence Avenue being shifted 1,400 feet south of the existing Joe Orr Road, after which it would curve northward behind the bus terminal, and end up in direct alignment with Main Street two miles to the east. This alignment would have required the relocation of five (5) homes and impacted approximately 0.9 acres of wetland. There would have also been impacts with the Lansing Airport proposed runway expansion project expansion zone approximately 0.5 miles east of Burnham Avenue. Alternative 2 was not chosen due to the undesirable geometry at Glenwood-Dyer Road and impacts to the Lansing Airport.

Alternative 3 was proposed with an alignment parallel to Glenwood-Dyer Road, but was rejected because it did not provide for the east-west continuity in the region that this project is to provide. It is also no longer viable due to the fact that Joe Orr Road has already been realigned to the south based on the Phase I chosen alternative west of Torrence Avenue.

Alternative 4 was similar to Alternative 2 above with the exception of the segment between Torrence Avenue and Burnham Avenue where the alignment was adjusted to run approximately ½ mile east before curving northeast to cross Glenwood-Dyer Road. This positioned the new intersection with Glenwood-Dyer road midway between the intersections of Torrence and Burnham Avenues, providing the best case traffic control scenario and the least amount of home relocation. Northeast of the Glenwood-Dyer intersection the proposed extension curved east to intersect Burnham Avenue at a 90 degree angle. During the initial planning process for this chosen alternative the wetland impacts were 1.5 acres. Due to funding limitations that required the project to be constructed in stages, over 20 years elapsed before the 2014 wetland delineation was performed. The updated wetland delineation resulted in five acres of additional wetland impacts on the same alignment that had developed on land where agricultural practices had been abandoned. Regarding Lansing airport impacts, the alignment as presented is included in the Environmental Assessment (EA) for the Airport already approved by the FAA. The Joe Orr Road alignment was part of the airport's planning process and changing it now would result in further setbacks requiring FAA approval of a new alignment.

Alternative 4 was selected as the preferred roadway design, as it minimized the amount of right-of-way acquisition and land use impacts and optimized the local and regional transport objectives of the area, all while minimizing the amount of impacts to local waterways.

Additional Alternatives:

During the Individual Permit review process, the USACE requested additional information regarding avoidance of Wetland 3 and Wetland 6. Shifting the roadway alignment to avoid Wetland 3 was not feasible, as it would result in undesirable and unsafe horizontal curves and angle of intersection with Glenwood-Dyer Road. It would also negatively impact the Village's proposed downtown development as well as economic development, as the Village has been anticipating the construction of this roadway corridor and new signalized intersection for over

two decades to help develop this economically depressed/low income area. Shifting the roadway alignment 135' south to minimize impacts to Wetland 6 would still require the detention pond to be located in the wetland area thus not avoiding the wetland and still requiring mitigation. A 135' shifted alignment also creates the need to relocate 3 additional property owners. The current alignment follows a south property line of proposed acquisitions on the east and west side of Burnham Avenue, so shifting the alignment even 20 feet takes another residential property on both sides of Burnham Avenue including a house which is located within 50 feet from the property line. Shifting the alignment any further south creates negative impacts at the intersection with Glenwood-Dyer Road including unsafe horizontal curvature.

While the Applicant was unable to accommodate the specific USACE recommendations listed above, the Applicant recently presented an alternate configuration of Pond 5 to the USACE which would result in approximately one acre of reduced wetland impacts to Wetland 6. To implement this change in design would require acquisition of more active agricultural ground immediately west of the proposed basin and result in a basin shape that is roughly rectangular and paralleling the proposed Joe Orr Road. The outlet and spillway would remain the same but shifted south. Pending USACE approval of the alternative detention basin design, the Applicant intends on moving forward with the revised configuration of Pond 5, which will reduce the amount of permanent wetland fill associated with the project.

Chloride Minimization:

Thorn Creek, a downstream water body potentially impacted by the proposed activities, is listed on the draft 2014 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use, with chloride listed as a potential cause of impairment. According to an August 2007 DuPage River Salt Creek Workgroup report the dominant source of chloride in Illinois waters is salt (39% sodium and 61% chloride) and the dominant source of salt and thus chloride in streams is deicing road salt. The same study recommended the following approaches to reducing road salt: 1) Use Best management practices for road salt storage including protection of salt storage area from rainfall and subsequent overland flow that would reach waterways, storage on impenetrable pads to prevent groundwater contamination, covering salt storage and loading areas, and washing salt hauling and loading vehicles in areas where water can be collected and reused in brine tanks or at a minimum be run through an oil and grit separator. 2) Annual education and training of staff that are involved in salt acquisition, storage or spreading that includes developing a Clear Level of Service for each route, optimizing routes to avoid deadheading, proper spreading procedures, maintaining and calibrating equipment, outfitting equipment with instrumentation to monitor conditions and salt usage, the use of scales and accurate record keeping, and constant communication with staff on weather conditions to optimize the amount of salt used. 3) The use of liquid deicers such as calcium magnesium, or organic deicers based on corn or beet derivatives, either added to the salt before spreading (pre-wetting) or used as a pre-storm application on the roads. 4) Chloride concentration monitoring in receiving stream to provide feedback on stream chloride levels in response to various practices.

The Cook County Department of Transportation and Highways (CCDOTH) is the responsible party conducting road salting in Lynwood. The Village of Lynwood will work with the

CCDOTH Supervisor to implement the above recommendations. Additionally, the Applicant will conduct annual chloride monitoring of North Creek (within the Village of Lynwood) in order to document the chloride loadings to the watershed both pre and post construction.

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities

The IDNR conducted a Natural Resources Review of the proposed project and determined that protected resources are not in the vicinity of the project location. Consultation under Part 1075 was terminated in the April 3, 2014 letter from IDNR.

Agency Conclusion.

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time this antidegradation review summary was written. We tentatively find that the proposed activity would result in the attainment of water quality standards; that all existing uses of the streams and wetlands would be maintained or compensated with mitigation; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity would benefit the community at large by improving the east-west movement of traffic within this area. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.